

# Now it is Light

Curadoria / Curator

Sofia Lemos

Amélie Bouvier

Ana Manso

Ana Mazzei

Andreia Santana

Bernard Lyot

Davide Zucco

Elias Heuinck

Ester Fleckner

Haris Epaminonda

Jeronimo Voss

Pedro A.H. Paixão

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encontros dialógicos com a reciprocidade emergente entre contribuições artísticas e arquivísticas, que se interpenetram em associações inesperadas. Juntamente com a geógrafa britânica Kathryn Yusoff, reiteramos um convite ao diálogo e a reconsiderar a geomorfização homogénea do tempo presente, através da exploração de «uma noção mais matizada de «vida geológica», que desafie a construção do Antropoceno como uma estratificação social indiferenciada.»<sup>14</sup>

Como nota Donna Haraway, a reflexão não é o único modelo ótico disponível para compreender a luz. A difração, pelo contrário, deixa de tomar o «original» como ponto de partida. O espelho de topázio pode não deslocar o mesmo para outro lugar. Antes, como escreve Haraway, «a difração pode ser uma metáfora para outro tipo de consciência crítica.»<sup>15</sup> Uma consciência crítica que leva a linguagem da luz e da ação para além de *qui propage les lumières*, permite que os trabalhos desta exposição possam surgir de modo descontínuo, afastando-se de posições e protocolos de representação reconhecíveis.

Emprestando o título de um poema de 1955 de Frank O'Hara, e destacando, assim, processos terrenos e materiais, *Now it is Light* foi concebida como um espaço de materializações inanimadas, de metais, minerais e estrelas cuja magnitude é apenas parcialmente apreendida. Estas notas de investigação deram lugar a um diálogo de dois anos com os artistas, arquivistas e astrónomos com quem, e através de quem, tentei transparecer a ambiguidade destas narrativas inconsúteis, endereçando modos diretos de abordagem no plano de exibição, seguindo a provocação de Édouard Glissant: «Pensar o pensamento consiste geralmente em recolher a um lugar sem dimensões, onde só a ideia do pensamento persiste. Mas, na realidade, o pensamento expande-se para o mundo. Informa a imaginação das pessoas e as suas poéticas variadas, para depois as transformar, o que significa que, nelas, o seu risco é concretizado.»<sup>16</sup>

14 Yusoff, Kathryn. «Anthropogenesis: Origins and Endings in the Anthropocene» In *Theory, Culture & Society*, Vol. 33 (2): p. 1

15 Haraway, Donna. 1997. *Modest\_Witness@Second\_Millennium.FemaleMan\_Meets\_OncoMouse: Feminism and Technoscience*. New York and London: Routledge. p. 273

16 Édouard Glissant. 1997. *Poetics of Relation*. Ann Arbor: University of Michigan Press. p. 1

[EN]

# Now it is Light

“To understand physical reality seems to demand not only the renunciation of an anthropocentric or geocentric world view, but also a radical elimination of all anthropomorphic elements and principles, as they arise either from the world to the five human senses or from the categories inherent in the human mind.”<sup>1</sup>

— Hannah Arendt, *The Conquest of Space and the Stature of Man*, 1963

| Excursus |

Throughout the history of navigation, the determination of time was never an accurate affair due to the magnetic forces through which clocks would lag and lose their minutes. Timepieces and navigational instruments were merely speculative objects using celestial observation and geognosy for imparting ‘how to make time, and how to ship it from place to place’<sup>2</sup>.

But if by time we mean the concatenation of singular instances of “now”, as we tend to represent our perception of duration, we may then assert that a linear series of “nows” has no reference point on a cosmological scale, where the true constitution of time, if such a thing exists, remains codified by the event, by the encounter, and by the concrete temporal, historical and political conditions through which time emerges as narrative substance.

1 Arendt, Hannah. 2007. “The Conquest of Space and the Stature of Man”. *The New Atlantis* 18: p. 43

2 In an allusion to the mercantile and transoceanic nature of the era which led to the precise science of chronometry

Inaugurated with the first experiments and observations on light reflection and refraction through the use of lenses and mirrors, classical geometric optics appeared as a systematic field of study with the contributions of Islamic astronomer and mathematician Ibn al Haytham (965-1040) whose seven-volume *Kitab al-Manazir* [Book of Optics] was published in the early thirteenth century. Contrary to the Aristotelian view, which argued that our eyes emit light rays that in turn enable our vision, al Haytham contended that sources of primary light are reflected by objects.

The history of Western thought, however, seems to have at least experientially inverted the direction of the light ray, equating the conditions of visibility with gaze, with drawing each thing out of the shadow with one's eyes. Gaze, seemingly a sense at a distance, thus becomes the ordered and ordering continuum between metaphysics and epistemology, and light, the ultimate form of "generation."<sup>3</sup> Let us recall Cicero, for whom leaving the cave meant shunning the worldly dark, and returning to it, a mere by-product of deviant curiosity. As the frontier of light was to be understood as an ontographic device, demarcating boundaries between the self and the Other, how do we move away from their heroic outings and economies of knowledge?

The cave as a reflective space, was first imagined in the 1867 edition of Jules Verne's *Voyage au centre de la terre*, illustrated by Édouard Riou. In *L'Étoile du sud* [The Southern Star] (1884) Verne situates the return to the cave in the positivist pursuit for the artificial production of a diamond, a lattice variation of a face-centred cubic crystal structure whose reflections continue to play a figurative role in the history of imagination. Set in a mining settlement in South Africa, Verne's narrative centres around a diamond's fabrication by a young French mining engineer, his achievement (christened by local miners as "The Southern Star") and its loss, accompanied by the forceful and decisive quest for the vanished diamond. When the protagonist

approaches the diamond's definite location, the mining engineer and his sagacious allies are invited to enter the "sacred cave" of Tonaïa's kingdom, a bottomless, unfathomable ore deposit illustrated by Léon Benett. Michel Serres describes the same cave as a field of communication networks between stratified and mineral agents:

"Verne's cave inverts the Platonic one by being a small-scale model of the outside world itself. In this instance, it is composed of hard-stone crystals, corundum or beryl, as well as glittering mirrors, spangling illuminations, incandescent and vibrant fireworks—each multiplying the reflections of one another, emitting, receiving and exchanging millions of pieces of information on themselves. Both medium and message, the diamonds return the brilliance of sardonyxes to the lapis lazuli, and the rubies reflect the flares of the aquamarines whilst the emeralds mirror themselves in the large looking glass of topaz. (...)"<sup>4</sup>

By inverting classical metaphysics and placing an emphasis not on the emergence from the cave but in its assessment, Verne legitimates brilliance as an operation that is both relational and experiential. Serres notes that an expedition to Verne's cave "demonstrates how the world really is, how it is fundamentally formed of hard and soft substrates, of matter and of mirrors, of things and of reflections, just as we and other living entities are formed."<sup>5</sup> Yet reflection in Verne's cave enables light to continue to "dawn" (as it would in any enlightened account) revealing the sudden visibility of objecthood. Hence, the allegory of the cave here operates in the long tradition of the facticity of the subject: its light-rays abstract and homogenise reflections, universalising and unifying theories of form. Rooted in histories of slavery, colonialism and gender oppression, Verne's *L'Étoile du sud* raises questions about how the boundaries of justice are set forth by normative frameworks, inasmuch as it exists as a historical reminder of the mineral and metal sediments that have been plundered by colonial agents and by the contemporary prospecting of globalised capital.

3 Pojman, Louis & Vaughn, L. 2011. *Classics of Philosophy*. New York: Oxford University Press, Inc. p. 171

4 Serres, Michel. 2014. "Matter and Information" in *Textures of the Anthropocene: Ray*. Cambridge, Massachusetts: MIT Press. p. 327

5 Ibid, p. 331

“(…) the striking picks laid bare the raw silver, the veins and branches and knots and nodes shining among broken crystals in the shattered rock, like stars and gatherings of stars, depth below depth without end, the light.”<sup>6</sup>

For Aristotle, Pliny the Elder and Seneca, not only natural ravines and caves, but also quarries, wells and other manmade excavations which break the continuity of the terrestrial strata have a significant influence on the propagation of light. Departing from modern colonial narrative accounts, the cave morphs into a globalised extractive site where elements of the universe partake in a constant move from surface differences to deep unities.

Alike the optical lens of the telescope, the pickaxe served as a tool by which an orderly projection of the world was made available for inspection by the mind. Resorting to magnification, the astronomical observatory partakes in prospecting the natural composition of stars inspired by tropes of classical geometric optics. The pickaxe, on the other hand, uproots those same elements of the universe, such as gold or uranium, in an accelerated movement downwards inside the cave. As such, the prospective coevelness of the mineshaft and the observatory grants them a privileged view into the planetary substratum. Inasmuch as the observatory remains earthbound while enabling astronomers to journey through alchemical emanations, the mine is embedded in the same vertical scheme of geocosmic time, both partaking in statecraft and resource economies. In the lagging encounter between these opposing temporalities, or, in other words, the telescoping of the geological past and the unearthing of the star system, the world itself was ordered in an amalgam of singular cosmic events.

On October 16 2017, astronomers witnessed two neutron stars collapsing into each other deep in space. The encounter irradiated large amounts of gold and other heavy elements in an unprecedented elemental outburst. Parsed by colonial modernity

6 Le Guin, Ursula K. “The Stars Below” in Damon Knight (ed.) *Orbit 14*. New York City: Harper & Row, 1974. p. 13

through a line in the direction in which the force of gravity acts on these expanses - the cosmic and the geological - the slow sedimentation of these elements is codified on the one hand, in earthbound fossilised forms of energy and, on the other, as gaseous clusters of evolving radiation, and circulated in modes of value creation and exchange in the form of dispossession. Today, as cosmic effusion is increasingly placed at the forefront of the radiant promises of the technosphere and under commodity and asset mediation, metals and minerals remain fettered by political and corporate boundaries. And yet, woven into the planetary surface as sedimented records displaced in time, these ensuing cosmic elements have a language of their own.

In the 1974 short story *The Stars Below*, Ursula K. Le Guin tells the tale of an astronomer accused of heresy who finds refuge in the dark oblique paths of a mine. Here his vigilant nights of observation unfold in timeless periods of rock picking in search of brightness. As the obscurity of the mine gives way to the astronomer’s cosmic will to find light, the mineworkers eventually give into the astronomer’s inquisitiveness. They show him how to swing the sledge with a pickaxe, how to look for the branchings of metal, and how to sort the rich from the rock. In Le Guin’s story of dissent and exile, the space of the mine casts human, geological and capital time as astronomically continuous.

In a similar enterprise to that of Jesuit scholar and polymath Athanasius Kircher (1602–1680) whose extensive geological forays rationalised the Earth as a geological entanglement of worldly fire and subterranean geoactivity, Le Guin’s astronomer sets forth to look for the glare in the endless night, the elements by which everything exists and becomes cognoscible. In Kircher’s view, this is the ‘geocosm’, or the exchange between the Earth’s core elements (hydrophilic, pyrophilic or aerophilic) and their emanations.<sup>7</sup> For both Kircher and the

7 Kempe, Stephan, Gottfried Naumann, and Boris Dunsch, “Athanasius Kircher’s Chapter XX ‘About caves, fractures, and the innumerable passages of the Earth and the Grotto of Antiparos from ‘Mundus Subterraneus’, 1678, translated from Latin” in *16th International Congress of Speleology*, Brno, 21 -28 July, 2013 in Brno, Czech Republic, Volume: 1: pp. 59-64

astronomer, the *geocosm* is a living thing, breathing with the universe's sustenance, swaying between visibility and burnout. And for both, the centrality of the Sun, the matter of all forms, metabolises incessantly in the 'womb' of the Earth.

Inasmuch as "the whole Earth is not solid but everywhere gaping, and hollowed with empty rooms and spaces, and hidden burrows,"<sup>8</sup> the sun too, deep down, according to modern scientific belief, could hold many passageways that reached all the way to its core. In this view, the Sun, like the Earth, is a living, thrumming whole that German physiologist William Preyer (1841–1897) famously described as a "(...) glowing organism whose breath may perhaps be shining iron vapour, whose blood may be flowing metal, and whose food may perhaps be meteorites."<sup>9</sup> Preyer was noted for his motion origin theory of life, wherein he postulated that the Earth was an immense living entity from which all present organisms descended, whereas all inanimate matter is no more than excretions of past organisms.

In Le Guin's *The Stars Below*, the ore deposit and the star come to be part of the same set of relations that ensue from their chemical emanations, as they give birth to worlds of politics and ethics in the history of early modern lore. Kircher had already noted, "(...) subterranean fire was necessary in the internal *œconomy*, or constitution of, as it were, the organised parts of the earth, and distribution of life and heat."<sup>10</sup> Its narrative seems to be as much about a materialist economy of knowledge as an epistemic quest for "how we might know what we don't yet know how to know."<sup>11</sup> While the astronomer's obsessive pursuit complicates, on the one hand, legacy relations between labour and meaning within our globalised extraction economies, it also questions, on the other, the heroic

8 Kircher, Athanasius. "Of Subterraneous Abysses, and Conservatories, or Store-houses of Fire; the Original Cause and Source of all fiery Eruptions, and Vulcanos." In *Mundus Subterraneus*, London, Printed by J. Darby, 1669. Online. [Accessed 24 July 2016]

9 Preyer, William. 1907 [1880]. *Hypotheses Concerning the Origin of Life in Scientific Facts (Die Hypothesen über den Ursprung des Lebens)*. Berlin: Leduc, p. 60

10 Kircher, Athanasius. "Of Subterraneous Abysses, and Conservatories, or Store-houses of Fire; the Original Cause and Source of all fiery Eruptions, and Vulcanos." In *Mundus Subterraneus*, London, Printed by J. Darby, 1669. Online. [Accessed 24 July 2016]

11 Rogoff, Irit. "Turning" in Paul O'Neill and Mick Wilson (eds.) *Curating The Educational Turn*. London: Open Editions, 2010. p. 37

accounts and standardised modes of inquiry set forth by the ray-like progression of cave allegories. As Le Guin notes,

—What is there, then, underneath it all?  
—The stars.  
—Will you find 'em then, the stars?  
— If I learn how to look.<sup>12</sup>

Partaking in the world's opacity, *The Stars Below* is a pyrophoric tale that opens a space of epistemic insecurity by addressing the series of continuities traversing cosmogony and human "world-making." Le Guin's cave is neither stasis nor resolution but it exists as unending narrative.

### | Circuitry |

If the direction of viewing in exhibition-making has traditionally been horizontal, astronomers and mining geologists tend to experience the world vertically, evading distracted and scattered modes of attention. An exhibition narrative, as in all matrixes, bears the aphorisms on which it is modelled. What epistemologies could unfold with the loss of protocols of representation in exhibition-making, and with storytelling making its way into our practices of exhibiting and display?

In the nineteenth century, Karl Marx recognised a problem of sustainability in the dynamic processes, systems and flows of energy in Kircher's and Le Guin's 'geocosm' when he first noted how the logic of capitalist accumulation and neoliberal reasoning ruptures the metabolism of the earth's systems, severing its basic operations of renewal. An important contribution to Marx's formulation came from an unsung Belgium astronomer and geologist who played a significant role in the 1848 insurgent revolts in Brussels, Jean-Charles Houzeau de Lehaie (1820–1888). While it remains uncertain whether Houzeau, Marx and Friedrich Engels crossed paths in Brussels during the revolutionary socialist years in which they wrote *The Communist Manifesto* (1847), Marx's private library preserved

12 Le Guin, Ursula K. "The Stars Below" in Damon Knight (ed.) *Orbit 14*. New York City: Harper & Row, 1974. pp. 9–10

a copy of Houzeau's *Klima und Boden* [Climate and Soil] (1861), where Houzeau first plots relations between landforms, geological events and anthropogenic action later explored by Marx in the third volume of *Capital* "The Process of Capitalist Production as a Whole."

Informed by the history of socialist and cosmopolitan principles of self-organisation, Houzeau was a key figure in the anti-royalist movements of the 1840s and had to seek exile across the Atlantic for his ties. Discharged from his position as an assistant astronomer at the Royal Observatory, Houzeau took a post at the Geological Survey of Belgium, not the improbable intercalation it might at first appear. After having relocated to the United States, in 1868, inspired by socialist thinker Charles Fourier whose ideas about cosmic consonance and social order would later motivate Surrealists and Situationists, Houzeau relocated to Jamaica where he founded a small *phalanstère* in a black community near Kingston. Here, within the tightly woven net of astronomical revolutions and political exile, I propose a speculative encounter between Marx's metabolic reading of the earth systems, the possible encounter between Houzeau and Marx's, and Le Guin's account as means to examine the pulsating encounter between cave allegories, astronomical observation and extractive economies.

In *Now it is Light*, diffraction operates in the emerging relationship between the substratum and the cosmic as a movement from which to unhinge the planet itself and those narratives encrusted in cave allegories. Caught in the tightly woven practices of chronological succession, commensurability and measurement as they determine the modern boundaries by which identity and memory are conformed, Ester Fleckner and Pedro A.H. Paixão explore the civilisational viewpoints in which the observed universe, from the infinitely small to the infinitely large, escapes human sense perception. Acting in slow choreography, Paixão repositions the viewer against the histories of timekeeping (specifically, the Sun-Earth-Transit of Venus trigonometry), while Fleckner disposes of anthropometry altogether in order to propose gender and race categories as fragmentary and irreconcilable protocols of representation.

Both speaking the language of light, the melancholic gazes of Bernard Lyot and Haris Epaminonda explore the refusal of

inevitability with regard to linear time. While Lyot's first moving images of the solar corona chronicle the earth's sustenance, Epaminonda foregrounds gleaming reflections of civilizational progress and the discrete nature of capturing and captivity. At a time when anthropogenic sedimentations are transforming previous geological compositions, Ana Mazzei and Davide Zucco propose an intercalated reading of past, present and future tenses and how these construct objects of research. While Mazzei explores the planetary substratum by intercalating narrative between hard rock, Zucco uncovers cosmological scenarios from where to explore the materiality of the cave. Andreia Santana offers a witness account of labour's agency in unearthing material memories that conflate in cave allegories. By converting fieldwork into a field event, a gestural impulse towards the rightful mediation of historical time falls short in a dubious claim over civilisational plots.

Following the multiple trajectories of an iron meteorite that shattered following its course in eastern Siberia in 1947, Amélie Bouvier proposes a 'future archaeology' where impact craters from outer space lend themselves to the understanding of land dispossession by geological and military surveys. Elias Heuinck and Jeronimo Voss, in collaboration with the Royal Observatory of Brussels and the Anton Pannekoek Institute for Astronomy at the University of Amsterdam, respectively explore star clusters across multiple scales, from the planetary to the cosmic plenum. Heuinck explores one of the largest surveys of the night sky of the 20th century, the *Carte du Ciel* (1887–1970), in a slapstick meditation on the emergence of the night sky as itself or as the by-product of a mediated optical relationship with the universe. Voss provides composite naked-eye views of the Milky Way fashioned by Dutch socialist astronomer Anton Pannekoek from exact records made by a group of amateur astronomers between 1890 and 1927.

From the long-winded time of the astronomical plenum to the accelerated cadence of resource extraction, how can we convert the current global disarray into image and narratives? For the visual essay presented in this publication, Coco Piccard combined quotations from the 1961 sci-fi novel *Solaris*, Stanisław Lem's contribution to thinking kinship with a sentient planet, and the documented accounts of the Trinity

nuclear test of 16 July 1945, along with images of melted objects from atomic blasts, speaking to the world's energetic, not to mention epistemic crisis of light.

Finally, operating within the transition of matter-related thought flowing in and out of the exhibition, Ana Manso unsettles the relationship between figure and background, confounding literality with the abstraction of the form. Manso re-contextualises the circle, parsing it as if it were modernity itself in an invitation to look through the earth from the perspective of the universe.

## | Surface |

Circuitry is thus an important formulation of this curatorial narrative: stories that arise from dialogic encounters with the emerging reciprocity between artistic and archival contributions that flow into one another in unforeseen associations. With British geographer Kathryn Yusoff we reiterate an invitation to dialogue and to re-consider the homogeneous geomorphing of the present times by exploring “a more nuanced notion of ‘geologic life’ that challenges the construction of the Anthropocene as an undifferentiated social stratification.”<sup>13</sup>

As Donna Haraway notes, reflection is not the only available optical model for understanding light. Diffraction, on the contrary, ceases to take the ‘original’ as its starting point. The looking glass of topaz might not displace the same elsewhere. Rather, Haraway writes, “diffraction can be a metaphor for another kind of critical consciousness.”<sup>14</sup> Such critical consciousness that takes the language of light and agency beyond *qui propage les lumières* allows the works in this exhibition to arise discontinuously, away from recognisable positions and protocols of representation.

Borrowing its title from a 1955 poem by Frank O’Hara to emphasise worldly and material processes, *Now it is Light* was conceived as a space of inanimate manifestations, of metals, minerals and stars whose magnitude is only relatively perceived. These research notes gave rise to a two-year long dialogue with the artists, archivists and astronomers with whom and through whom I attempted to place ambiguity, seamless narratives and direct modes of address at the forefront of the display, following Édouard Glissant’s provocation: “Thinking thought usually amounts to withdrawing into a dimensionless place in which the idea of thought alone persists. But thought in reality spaces itself out into the world. It informs people’s imagination, their varied poetics, which it then transforms, meaning, in them its risk becomes realised.”<sup>15</sup>

13 Yusoff, Kathryn. “Anthropogenesis: Origins and Endings in the Anthropocene.” In *Theory, Culture & Society*, Vol. 33 (2): p. 1

14 Haraway, Donna. 1997. *Modest\_Witness@Second\_Millennium.FemaleMan\_Meets\_OncoMouse: Feminism and Technoscience*. New York and London: Routledge. p. 273

15 Édouard Glissant. 1997. *Poetics of Relation*. Ann Arbor: University of Michigan Press. p. 1